

On page 3 please substitute for the 1st paragraph starting on line 1, the following:

B2 -- problematic in that not only the stability of cultured cell properties is considerably impeded due to a lack of the qualitative stability of the serum but also the stable, accurate and inexpensive use of established cells is considerably hampered due to the very high price of the serum. Accordingly, proliferation of an established immortalized cell culture in a serum-free medium, while stably retaining its character, would be industrially very beneficial.--

On Page 4 please substitute for the 3rd and 4th paragraph the following:

B3 --(3) the cell culture according to the above item (1) above wherein the enzyme is NADPH cytochrome P450 reductase, cytochrome P450, flavin monooxygenase, epoxy hydratase, glucucosyl transferase, sulfotransferase or glutathione S-transferase,

(4) the cell culture according to the above item (3) above wherein the cytochrome P450 is CYP1A1, CYP1A2 or CYP3A,--

On page 6 please substitute for the 6th paragraph starting on line 22, the following:

B4 -- The human normal hepatocytes (preferably human normal hepatic parenchymal cells) used can be separated from normal tissue of human adults, human fetuses, etc. (preferably human fetuses) by a well-established method known as collagenase perfusion. What are called primary cultured cells thus obtained are immortalized in accordance with various commonly known methods etc. Specifically, there may be mentioned a method focusing on the permanent proliferation of tissue which has cancerated wherein individual normal cells are immortalized by transformation with an oncogene introduced therein. Immortalized cell cultures thus established include, for example, subcultures of transformants of animal cells as obtained by introducing an oncogene, such as ras or c-myc, or an oncogene of a DNA type tumor virus, such as adenovirus EIA, SV (simian virus) --

On Page 7, 1st paragraph, please substitute the following:

3b -- 40 virus, or human papilloma virus (HPV16), or a tumor antigen (T antigen) gene thereof (E. Ponet et al., Proc. Natl. Acad. Sci., USA, 82, 8503 (1985)). Preferably, the method based on introduction of the T antigen gene of SV40 origin, a modification thereof, or the like can be used (M. Miyazaki et al., Experimental Cell Research, 206, 27-35 (1993)). To culture (subculture) these immortalized hepatocytes, there may be used commonly known culturing methods using known media [e.g., complete synthetic media (preferably serum-free complete synthetic media (e.g., ASF104 medium, Ajinomoto), MEM medium containing about 5 to about 20% fetal bovine serum [Science, Vol. 122, 501 (1952)], DMEM medium [Virology, Vol. 8, 396 (1959)], RPMI 1640 medium [The Journal of the American Medical Association, Vol. 199, 519 (1967)], Williams' medium (Nissui Pharmaceutical), 199 medium [Proceedings of the Society for the Biological Medicine, Vol. 73, 1 (1950)]]. Complete synthetic media [serum-free complete synthetic media (e.g., ASF104 medium, Ajinomoto)] etc. are particularly preferred. The pH is preferably about 7 to about 7.2. Cultivation is normally carried out at about 37°.--

On page 7 please substitute for the 3rd paragraph the following:

3b -- From among the immortalized hepatocytes thus obtained, those retaining metabolic characteristics specific to the liver, more specifically enzyme activity, enzymes, gene expression and gene expression induction associated with the metabolism of xenobiotics, are selected.--

On page 8, last paragraph to page 9 1st paragraph, please substitute the following:

-- Enzymes involved in the liver-specific metabolism of xenobiotics include, for example, NADPH cytochrome P450 reductase, cytochrome P450, flavin monooxygenase, epoxy hydratase, glucucosyl transferase, sulfotransferase, and glutathione S-transferase. Of these enzymes, cytochrome P450 represents the class of enzymes most important from the viewpoint of distribution and functions in the metabolism of xenobiotics. cytochrome P450 is a generic name for a large number of enzymic proteins; CYP1A1, CYP1A2, CYP2A6, CYP2B6, CYP2C8, CYP2C9, CYP2C19, CYP3A (specifically CYP3A4, CYP3A5, CYP3A7 etc.), CYP2D6 etc. are known members of the cytochrome P450 class involved in the metabolism of xenobiotics in the human liver, with CYP1A1, CYP1A2, CYP3A etc. preferably used for the immortalized hepatocyte culture of the present invention. In addition, the functions of cytochrome P450 are also generically called the mixed function oxidation (MFO) and are detected as ethoxyresorufine dealkylation activity, benzyloxyresorufine dealkylation activity, pentoxylresorufine dealkylation activity, methoxyresorufine dealkylation activity etc. Furthermore, the presence of NADPH cytochrome P450 reductase is essential to the expression of the MFO functions of the cytochrome P450 protein; this enzyme can also be classified as an enzyme which metabolizes xenobiotics.--

On page 11 please substitute for the 3rd paragraph the following:

B8 -- A pharmaceutical containing a compound obtained by said screening method or a salt thereof can be produced by a commonly known production method or a method based thereon. The preparations thus obtained can be used with, for example, humans or mammals (e.g., rats, mice, guinea pigs, rabbits, sheep, swine, bovines, horses, cats, dogs, monkeys) because they are safe and of low toxicity. --

On page 24, for the 1st paragraph, please substitute the following:

B9 -- respective types of cytochrome P450 available from the Gene Bank database. The accession numbers at the Gene Bank are K03191 for CYP1A1, M55053 for CYP1A2, J02625 for CYP2E1, J04449 for CYP3A4, J04813 for CYP3A5, and D00408 for CYP3A7. The individual primers used were

5'- ATGCTTTTCC CAATCTCCAT GTGC (SEQ ID NO:1) and
5'- TTCAGGTCCT TGAAGGCATT CAGG (SEQ ID NO:2) for CYP1A1,
5'- GGAAGAACCC GCACCTGGCA CTGT (SEQ ID NO:3) and
5'- AAACAGCATC ATCTTCTCAC TCAA (SEQ ID NO:4) for CYP1A2 and
5'- ATGGCTCTCA TCCAGACTT G (SEQ ID NO:5) and
5'- GGAAAGACTG TTATTGAGAG A (SEQ ID NO:6) for CYP3A. --
